National Institute of Environmental Health Sciences

Climate change risk: An adaptation and mitigation agenda for Indian cities

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Abstract:

This paper considers the needed adaptation and mitigation agenda for cities in India - where the urban population is likely to grow by around 500 million over the next 50 years. It considers the likely changes that climate change will bring in temperature, precipitation and extreme rainfall, drought, river and inland flooding, storms/storm surges/coastal flooding, sea-level rise and environmental health risks, and who within urban populations are most at risk. It notes the importance for urban areas of an effective rural adaptation agenda especially in maintaining the productivity and functioning of rural systems. It highlights the importance of today's infrastructure investments, taking into account climate changes, given the long lifespan of most infrastructure, and the importance of urban management engaging with changing risk profiles. One important part of this is the need to connect official adaptation initiatives to the much-improved natural hazard risk assessment, management and mitigation capacity that responded to major disasters. The paper ends by describing a possible urban climate change adaptation framework, including changes needed at the national, state, city and neighbourhood levels, and linkages to mitigation.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Extreme Weather Event, Food/Water Quality, Food/Water Security, Food/Water Security, Human Conflict/Displacement, Precipitation, Sea Level Rise, Temperature

Extreme Weather Event: Drought, Flooding, Hurricanes/Cyclones

Food/Water Quality: Other Water Quality Issue

Water Quality (other): Ocean temperature; Saltwater intrusion

Food/Water Security: Agricultural Productivity, Fisheries, Food Access/Distribution

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal, Rural, Urban

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: India

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease, Morbidity/Mortality

Infectious Disease: Foodborne/Waterborne Disease, Vectorborne Disease

Foodborne/Waterborne Disease: Cholera, General Foodborne/Waterborne Disease, Other Diarrheal Disease

Vectorborne Disease: General Vectorborne, Mosquito-borne Disease

Mosquito-borne Disease: Dengue, Malaria

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status, Workers

Other Vulnerable Population: People with low access to education; Landless; Slum residents

Resource Type: ☑

format or standard characteristic of resource

Policy/Opinion, Review

Resilience: ☑

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: ☑

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content